

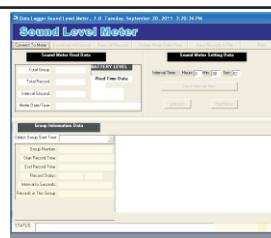
MANUAL RANGING / AUTO RANGING / DATA LOGGING
Model KM -927 / Model KM -928 / Model KM -929

KM -927

KM -928

KM -929

Tripod Mounting Stand

Stand for Wall Mounting KM -929

KM -929 Software Screen

"KUSAM-MECO" Digital sound level meters are suitable for noise regulatory measurements. It has full function to quickly & accurately measure sound levels in factories, offices, stores, machine shops & D.G. Set rooms. It helps to meet sound level pollution control regulations.

Model KM 927 has AC / DC signal out put for connection to Oscilloscope or remote indicator.

ACCESSORIES :

KM 927 : User manual, Carrying Case, 9V battery, Screwdriver, 3.5plug

KM 928 : User manual, Carrying Case, 9V battery

KM 929 : User manual, Carrying Case, 9V battery, Software CD & Cable

OPTIONAL ACCESSORIES :

DC adaptor Voltage 9V, (8-13 V, Max.) Supply current > 30mA, Stand for Tripod Mounting; Stand for Wall mounting.

FEATURES :

3 1/2 digits Display.

Time Weighting : Fast , Slow

Resolution 0.1dB.

USB interface (KM929)

MAX / MIN Hold function

14000 Records Data logger (KM 929)

AC / DC Signal output (KM 927)

Low battery indication

Applicable standards : IEC651 Type II. ANSI 1.4 Type 2.

GENERAL SPECIFICATIONS

Models	KM 927	KM 928	KM 929
Display	3 1/2 digits LCD, Resolution 0.1 dB Display update 0.5 sec.		
Frequency Range		31.5 Hz ~ 8KHz	
Measuring Level Range		30 ~ 130 dB (3 Levels)	
Measurement Item		SPL (Sound Pressure Level)	
Frequency Weighting		A/C	
Microphone		1/2 inch Electret Condenser Microphone.	
Time Weighting		FAST (125mS) , SLOW (1 sec)	
Level Ranges	Lo : 30-80 dB ; Med : 50-100 dB; Hi : 80 - 130 dB (KM - 928 & KM - 929 are Auto Ranging)		
Accuracy		± 1.5 dB (ref. 94 dB @ 1KHZ)	
Dynamic Range		50 dB	
Alarm Function		"OVER" is shown when input is more than upper limit of range "UNDER" is shown when input is less than lower limit of range	
Data Hold	No	Yes	Yes
Max / Min	Yes	Yes	Yes
Tripod Mounting Screw	Yes	Yes	Yes
USB Interface	No	No	Yes
Auto Ranging	No	Yes	Yes
Auto Power Off	No	Yes	Yes
Data Logger	No	No	14000 Records
PC Software	No	No	Yes
Backlight Display	No	Yes	Yes
Power		Single standard 9V battery	
Operation Height		Upto 2000 M above sea level.	
Operating Temp & Humidity		5°C ~ 40° C, below 80 % RH.	
Storage Temp & Humidity		-10° C ~ 60° C, below 70 % RH(Battery removed).	
Dimension	280mm (L) x 80mm(W) x 32mm(H)	200mm (L) x 55mm(W) x 38mm(H)	200mm (L) x 55mm(W) x 38mm(H)
Weight	About 300g. (including battery)	About 170g. (including battery)	About 170g. (including battery)

All Specifications are subject to change without prior notice

SOUND LEVEL METER

Model KM-927 / KM-928 / KM-929

**KM-928**

A Sound Level Meter is a device which measures sound pressure to determine how intense sounds are, measuring in decibels. Decibels are a logarithmic scale based on the sensitivity of the human ear. Prolonged exposure to sounds over 85 decibels can lead to hearing loss, making measurement of decibel levels important for people who work in noisy environments so that they know when they need to protect their ears.

For reference, normal conversation occurs between around 40 and 60 decibels, depending on who is talking. A firecracker is about 140 decibels, and a jackhammer runs at around 100 decibels. Musicians, mechanics, construction workers, and other people who work in loud environments can endanger their hearing, especially if they work in environments with explosives, which can generate sound waves intense enough to cause pain and immediate hearing damage. A decibel meter can indicate when sound has reached the danger zone.

The Sound Level meter measures the sound pressure and provides a reading in decibels for the convenience of the user. Some may also provide readings in other units of measurement, depending on the uses they are intended for. Sound Level meters are often designed to be portable so that people can move them around as needed, and are often hand held, although sometimes they can be part of a permanent instrument array which is designed to take continuous measurements in a given area.

One application in which a decibel meter can be used is in the reinforcement of municipal laws. Many municipalities bar sounds above a certain decibel level for safety and comfort, and may have restrictions on noise during certain hours. Police officers can carry decibel meters to determine whether or not a sound is violating the noise ordinance. These devices are also used in noise pollution studies which are used to determine the impact of passing vehicles, aircraft, D. G. Sets and other sound-generating objects on a community.

UNDERSTANDING THE DECIBEL SCALE

The Sound Level Meter is also used in the music industry, during recording and setting up for concerts as well as monitoring of conditions in a concert. Similarly, meters may be installed in noisy workplaces to monitor conditions, and may be designed to send out alerts when people need to wear ear protection or take other precautions to protect their hearing. These devices are also utilized in testing of hearing protection such as ear plugs and headphones, with such products coming with a decibel ratings to provide an indicator as to which setting they can and should be used in.

You have to think about the decibel scale very carefully, because it's a logarithmic scale and it works in a different way than the scale on a ruler, which is a linear scale. On a ruler, a distance of 20cm is twice as long as a distance of 10cm & 30cm is three times as long. But the logarithmic decibel scale goes up in powers of ten: every increase of 10dB on the scale is equivalent to a 10-fold increase in sound intensity (which broadly corresponds with loudness). That means a sound of 20dB is 10 times louder than a sound of 10dB and a 30dB sound is 100 times louder. A sound of 100dB is actually 1,000,000,000 times louder than a sound of 10dB and not 10 times as loud, as you might suppose. That's why sounds high up the decibel scale (from about 85-200dB) are a major cause for concern: the sound waves carry so much energy that they will damage your hearing, sooner or later.



Photo : Imagine how loud this job can get. The Landing Signal Enlisted (LSE) is the brave person who has to guide helicopters and jet airplanes safely in to land on aircraft carriers. Notice that they always wear heavy duty earmuffs to protect their hearing against jet engine noise that can exceed 150dB at such close quarters.

The Decibel Scale

Level in decibels	Typical everyday example	Times louder than 10dB
10dB	Rustling or falling leaves	1
20dB	Watch ticking	10
30dB	Birds flying by	100
40dB	Quiet conversation	1,000
50dB	Louder conversation	10,000
60dB	Quiet traffic noise	100,000
70dB+	Louder traffic	1,000,000
80dB+	Loud highway noise at close range	10,000,000
85dB	Hearing damage after approximately 8 hours.	
100dB	Jackhammer (pneumatic drill) at close range	1,000,000,000
100dB	Hearing damage after about 15 minutes.	
110dB+	Jet engine at about 100m	10,000,000,000
120dB	Threshold of pain. Hearing damage after very brief exposure	

Sound Level Meters look quite simple. They have a pointy stick at the top, which is the microphone that samples and measures the sound. The stick keeps the microphone away from the body of the instrument, cutting out reflections, and giving a more accurate measurement. Inside the square box at the bottom of the meter, electronic circuits measure the sound detected by the microphone and amplify and filter it in various ways before showing a readout on a digital LCD display.